

IN THE CLAIMS:

Please amend the claims as indicated below.

5 Please cancel claims 1, 3 and 18-26, without prejudice

1 (Cancelled)

2 (Currently Amended) The method of claim + 4, further comprising the
10 step of selecting motifs of the concatenated motifs and the first motifs for removal based
on at least one predetermined criteria.

3. (Cancelled).

15 4. (Currently Amended) A method for pattern discovery on an input
sequence comprising a plurality of elements, the method comprising the steps of:

determining a plurality of first motifs from the input sequence, each first
motif comprising at least one element from the input sequence;

20 concatenating each of the plurality of first motifs with another of the
plurality of first motifs to create a plurality of concatenated motifs;

removing one or more selected motifs of the concatenated motifs and the
first motifs~~The method of claim 3, wherein the step of removing comprises removing~~
suffix motifs in the concatenated motifs and the first motifs, and wherein each motif in
the concatenated motifs and the first motifs has an associated location list, and wherein
25 the step of removing suffix motifs comprises the steps of:

offsetting each location list for each of the motifs in the concatenated
motifs and the first motifs to zero;

checking each location list for each of the motifs in the concatenated
motifs and the first motifs to determine location lists that are the same; and

30 augmenting a-motifs that have the same location list to create at least one
new motif.

5 (Currently Amended) The method of claim 4, wherein the step of removing comprises removing redundant motifs in the concatenated motifs and the first motifs.

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6. (Original) The method of claim 5, wherein each motif in the concatenated motifs and the first motifs has an associated location list, and wherein the step of removing redundant motifs comprises the steps of:

10 determining any motif whose location list is a union of other location lists associated with motifs in the concatenated motifs and the first motifs; and

removing any motif whose location list is a union of other location lists associated with motifs in the concatenated motifs and the first motifs

7. (Currently Amended) The method of claim 4, wherein the step of removing comprises removing selected motifs in the concatenated motifs and the first motifs if the selected motifs do not occur in the concatenated motifs and the first motifs more than a predetermined number of times.

8 (Currently Amended) The method of claim 4, further comprising the step of:

20 performing the steps of concatenating and removing until no new motifs are generated by said concatenating and removing steps.

9. (Currently Amended) The method of claim 4, wherein:
25 each first motif is a solid element motif;

the step of determining a plurality of first motifs comprises the steps of:

30 determining a plurality of solid element motifs, each solid element motif comprising at least one element from the input sequence; and
creating a plurality of second motifs by adding at least one don't care element to each of the solid element motifs;

the step of concatenating further comprises the steps of:

selecting a motif from the solid element and second motifs;
concatenating the selected motif with another selected motif from the solid
element and second motifs; and
performing the process of selecting and concatenating until each motif
5 from the solid element and second motifs has been concatenated with
another motif from the solid element and second motifs;

the method of claim 4 further comprises the steps of:

trimming the solid element, second, and concatenated motifs; and

performing the steps of concatenating and trimming until no new motifs are

10 generated by said concatenating and trimming steps.

10. (Original) The method of claim 9, further comprising the step of creating
flexible motifs from the first motifs.

15 11. (Currently Amended) The method of claim ~~1~~ 4, further comprising the
step of creating flexible motifs from the first motifs.

12 (Currently Amended) The method of claim ~~1~~ 4, wherein each element of
the input sequence comprises a character from an alphabet

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13 (Currently Amended) The method of claim ~~1~~ 4, wherein at least one
element of the input sequence comprises a set of characters.

14. (Currently Amended) The method of claim ~~1~~ 4, wherein each element of
25 the input sequence comprises a real number

15. (Currently Amended) The method of claim 8, wherein one or more
remaining motifs of the concatenated motifs and the first motifs form a basis set of motifs
and wherein the method further comprises the steps of:

determining a plurality of motif sets from a plurality of selected motifs, the selected motifs selected from a plurality of basis motifs, wherein the plurality of selected motifs all begin with a selected element;

determining unique intersection sets from the plurality of motif sets; and

5 determining redundant motifs from the intersection sets and the motif sets.

16 (Currently Amended) A computer system for pattern discovery on an input sequence comprising a plurality of elements, comprising:

a memory that stores computer-readable code;

10 a processor operatively coupled to the memory, the processor configured to implement the computer-readable code, the computer-readable code configured to:

determine a plurality of first motifs from the input sequence, each first motif comprising at least one element from the input sequence;

15 concatenate each of the plurality of first motifs with another of the plurality of first motifs to create a plurality of concatenated motifs; and

remove one or more selected motifs of the concatenated motifs and the first motifs, wherein the removal comprises removing suffix motifs in the concatenated motifs and the first motifs, and wherein each motif in the concatenated motifs and the first motifs has an associated location list, and wherein the step of removing suffix motifs
20 comprises the steps of:

offsetting each location list for each of the motifs in the concatenated motifs and the first motifs to zero;

checking each location list for each of the motifs in the concatenated motifs and the first motifs to determine location lists that are the same; and

25 augmenting motifs that have the same location list to create at least one new motif.

17 (Currently Amended) An article of manufacture for pattern discovery on an input sequence comprising a plurality of elements, comprising:

30 a computer readable medium having computer-readable code means embodied thereon, the computer-readable program code means comprising:

a step to determine a plurality of first motifs from the input sequence, each first motif comprising at least one element from the input sequence;

a step to concatenate each of the plurality of first motifs with another of the plurality of first motifs to create a plurality of concatenated motifs; and

5 a step to remove one or more selected motifs from the concatenated motifs and the first motifs, wherein the step of removing comprises removing suffix motifs in the concatenated motifs and the first motifs, and wherein each motif in the concatenated motifs and the first motifs has an associated location list, and wherein the step of removing suffix motifs comprises the steps of:

10 offsetting each location list for each of the motifs in the concatenated motifs and the first motifs to zero;

checking each location list for each of the motifs in the concatenated motifs and the first motifs to determine location lists that are the same; and

15 augmenting motifs that have the same location list to create at least one new motif.

18-26 (Cancelled)